

Patent claims

1. A surfactant/solvent system for liquid organic formulations, characterized in that it comprises
 - one or more aromatic-based surfactants and
 - one or more completely esterified organic phosphates and/or phosphonates which are as polar as possible, but which at the same time are water-insoluble or soluble in water to 5 g/l, as solvent.
2. The surfactant/solvent system as claimed in claim 1, characterized in that it comprises one or more aromatic-based surfactants from the group
 - b1.1) phenols, phenyl (C₁-C₄)alkyl ethers or (poly)alkoxylated phenols,
 - b1.2) (poly)alkylphenols or (poly)alkylphenol alkoxylates,
 - b1.3) polyarylphenols or polyarylphenol alkoxylates,
 - b1.4) compounds which formally represent the reaction products of the molecules described under b1.1) to b1.3) with sulfuric acid or phosphoric acid, and their salts neutralized with suitable bases,
 - b1.5) (poly)alkyl- and (poly)arylbenzenesulfonates which are acidic and have been neutralized with suitable bases.
3. The surfactant/solvent system as claimed in claim 1 or 2, characterized in that it comprises one or more aromatic-based surfactants from the group
 - phenol reacted with 4 to 10 mol of ethylene oxide,
 - triisobutylphenol reacted with 4 to 50 mol of ethylene oxide,
 - nonylphenol reacted with 4 to 50 mol of ethylene oxide,
 - tristyrilphenol reacted with 4 to 150 mol of ethylene oxide and
 - acidic (linear) dodecylbenzenesulfonate.
4. The surfactant/solvent system as claimed in any of claims 1 to 3, characterized in that it comprises one or more compounds from the group
 - b2.1) largely water-insoluble polar esters of phosphoric acid with alcohols from the group comprising phosphoric esters with

- monohydric alkanols having 5 to 22 carbon atoms,
 - diols or polyols,
 - aryl, alkylaryl, poly(alkyl)aryl or poly(arylalkyl)aryl alcohols,
 - alkoxyated alcohols obtained by reacting the abovementioned alcohols with alkylene oxides, or
 - alkoxyated alcohols obtained by reacting monohydric alkanols with 1 to 4 carbon atoms and alkylene oxides,
 where the 3 alcohol components of the phosphoric ester can be identical or different and are chosen such that the ester can be used as a largely water-insoluble polar solvent, and

b2.2) largely water-insoluble and also polar phosphonates based on alkyl-, aryl-, alkylaryl-, poly(alkyl)aryl- or poly(arylalkyl)arylphosphonic acids diesterified with alcohols and/or alkoxyated alcohols, with alcohols from the group

- monohydric alkanols having 1 to 22 carbon atoms,
- diols or polyols,
- aryl, alkylaryl, poly(alkyl)aryl and poly(arylalkyl)aryl alcohols or
- alkoxyated alcohols obtained by reacting the abovementioned alcohols with alkylene oxides, preferably (C₁-C₄)alkylene oxides,

as the respective alcohol component, where the 2 alcohol components of the phosphonic ester can be identical or different and are chosen such that the ester can be used as a largely water-insoluble polar solvent.

5. The surfactant/solvent system as claimed in any of claims 1 to 4, characterized in that it comprises one or more compounds from the group

- orthophosphoric acid triesterified with alkoxyated short-chain alcohols having 1 to 22 carbon atoms in the alkyl radical and 1 to 30 alkyleneoxy units in the polyalkyleneoxy moiety,
- orthophosphoric acid triesterified with alkyl alcohols having 5 to 22 carbon atoms,
- orthophosphoric acid partially esterified with optionally alkoxyated alcohols having 1 to 22 carbon atoms in the alkyl radical or optionally alkoxyated phenol derivatives, in each

case having 0 to 30 alkyleneoxy units in the polyalkyleneoxy moiety, the remaining OH valences of the orthophosphoric acid having been subsequently alkoxyated, and

- esters of n-octylphosphonic acid which have been formally reacted twice with alcohols.

6. A liquid formulation which comprises
 - (a) one or more water-insoluble active ingredients,
 - (b) the surfactant/solvent system according to the invention (= component mixture (b)) as claimed in any of claims 1 to 5,
 - (c) optionally further organic solvents,
 - (d) optionally further surfactants and/or polymers and
 - (e) optionally water.
7. The liquid formulation as claimed in claim 6, which comprises
 - a) 1 to 50% by weight of pesticide active ingredients,
 - b) 5 to 80% by weight of the surfactant/solvent system (b) according to the invention,
 - c) 0 to 40% by weight of further organic solvents,
 - d) 0 to 30% by weight of further surfactants,
 - e) 0 to 20% by weight of customary formulation auxiliaries and
 - f) 0 to 96% by weight of water.
8. An emulsifiable concentrate, characterized in that it comprises
 - a) 10 to 40% by weight of one or more water-insoluble active ingredients,
 - b) 10 to 60% by weight of the surfactant/solvent system (b) according to the invention, as claimed in any of claims 1 to 5,
 - c) 5 to 35% by weight of further organic solvents,
 - d) 10 to 25% by weight of further surfactants and
 - e) 0 to 10% by weight of customary formulation auxiliaries.
9. The formulation as claimed in any of claims 6 to 8, characterized in that it comprises one or more active ingredients from the group of the herbicides desmedipham, phenmedipham and ethofumesate.

10. A process for the preparation of a formulation defined as claimed in any of claims 6 to 8, characterized in that the components are mixed with one another.
11. A method of controlling undesired plant growth, characterized in that an effective amount of a formulation as claimed in any of claims 6 to 9, which comprises a herbicidal active ingredient, is applied, if necessary following dilution with water, to the plants, plant parts or area where the plants grow.
12. The use of the surfactant/solvent system as claimed in claim 1 in liquid preparations of active ingredients.
13. The use as claimed in claim 12 in emulsifiable concentrates (EC).

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